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EXAMINER

LEUNG, CHRISTINA Y

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/713,685

Applicant(s)

ARONSON ET AL.

Examiner

Christina Y. Leung

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-42 is/are rejected.
7) ☒ Claim(s) 34-39, 41 and 42 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11132003, 02112004.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

In the instant application, there is no claim 37. Misnumbered claims 38-43 have been renumbered claims 37-42 respectively, with all of their corresponding claim dependencies also adjusted where necessary. Applicant should accordingly correct the numbering of the claims in future responses. *Applicant should also note that the claim numbers 37-42 referred to by Examiner throughout this Office Action reflect this renumbering.*

2. Claims 34-39, 41, and 42 are objected to because of the following informalities:

Claim 34 recites “the optoelectronic device” four times, in lines 7, 9, 10, and 14 of the claim, but previously recites “an optoelectronic transceiver.” Examiner respectfully suggests that Applicants amend the phrases in this claim so that the terminology is consistent.

Similarly, claim 35 recites “the optoelectronic device” six times, in lines 7, 8, 10, 13, 14, and 16 of the claim, but previously recites “an optoelectronic transceiver.” Claims 36-39 and 41 also recite “the optoelectronic device” in the last line of each claim. Claim 42 also recites “the optoelectronic device” six times, in lines 7, 8, 10, 13, 14, and 16 of the claim. Again, Examiner respectfully suggests that Applicants amend these phrases in the claims so that the terminology is consistent.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 11, 12, and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites “the control signals generated by the control circuitry” in lines 2-3 of the claim. Similarly, claim 12 recites “the control circuitry generates the first control signal” in lines 1-2 of the claim. There is insufficient antecedent basis for these limitations in both claims, since claim 1 on which each claim depends does not previously recite “control circuitry” or any “control signals.”

Claim 25 recites “the integrated circuit” three times, in lines 9, 12, and 15 of the claim. There is insufficient antecedent basis for these limitations because the claim does not previously recite an “integrated circuit.”

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14-17, 21, 23, 24, and 26-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over King et al. (US 5,812,572 A) in view of Stephenson (US 2002/0027688 A1).

Regarding claim 14, King et al. disclose an optoelectronic device (Figure 1), comprising:

a laser transmitter 36; and

a controller (various circuit elements shown in Figure 1, including microcontroller 50);

wherein the controller comprises:

memory (the PROM, RAM, and EEPROM elements in microcontroller 50), including one or more memory arrays for storing information related to the optoelectronic device;

analog to digital conversion circuitry 52 for receiving a plurality of analog signals from the optoelectronic device, the analog signals corresponding to operating conditions of the optoelectronic device, converting the received analog signals into digital values, and storing the digital values in predefined locations within the memory (column 13, lines 49-67; column 14, lines 1-9); and

a memory interface 26 for allowing a host to read from host specified locations within the memory in accordance with commands received from a host device (such as computer 90 in Figure 3; column 10, lines 10-18; column 16, lines 58-63).

Although King et al. also disclose a photodiode receiver 40, the receiver 40 receives a signal fed back from the transmitter; they do not specifically disclose a photodiode receiver together with the disclosed laser transmitter in a “transceiver” context (wherein the receiver would receive signals sent from an opposing communication device).

However, bidirectional optical communication using a transmitter and a receiver at both ends is well known in the art. Stephenson in particular teaches an optical communications system (Figures 2-4), including a laser transmitter 110 such as already disclosed by King et al., and further including a photodiode receiver 134 associated with that transmitter to provide a

transceiver. It would have been obvious to a person of ordinary skill in the art to further include a receiver as taught by Stephenson in the system disclosed by King et al. in order to enable bidirectional communications between two locations.

Regarding claim 15, King et al. disclose generating a time value corresponding to cumulative operation time (referred to as “hours of operation” by King et al.) of the optoelectronic device, wherein the generated time value is readable via the memory interface (column 13, lines 64-67; column 14, lines 43-48; column 15, lines 42-50; Figure 12 shows that “hours of operation” is stored in memory). Similarly, regarding claim 16, King et al. disclose generating and storing in a register a time value corresponding to cumulative operation time of the optoelectronic device, wherein the register in which the time value is stored comprises one of the memory arrays of the memory (again, see Figure 12). Although King et al. do not explicitly show a “clock” element, it would be well understood in the art that King et al. inherently disclose some clock or time measurement element for providing the cumulative operation time value they explicitly disclose.

Regarding claim 17, King et al. disclose a power supply voltage sensor (shown as “power supply monitor” in Figure 1) coupled to the analog to digital conversion circuitry 52, the power supply voltage sensor generating a power level signal corresponding to a power supply voltage level of the optoelectronic device, wherein the analog to digital conversion circuitry is configured to convert the power level signal into a digital power level value and to store the digital power level value in a predefined power level location within the memory (column 16, lines 16-20).

Regarding claim 21, King et al. disclose a temperature sensor 56 coupled to the analog to digital conversion circuitry 52, the temperature sensor generating a temperature signal corresponding to a temperature of the optoelectronic transceiver, wherein the analog to digital conversion circuitry is configured to convert the temperature signal into a digital temperature value and to store the digital temperature value in a predefined temperature location within the memory (column 13, lines 14-64).

Regarding claim 23, King et al. disclose fault handling logic (i.e., the logic circuits in microcontroller 50), coupled to the optoelectronic device for receiving at least one fault signal from the optoelectronic device, coupled to the memory (i.e., the EEPROM) to receive at least one flag value stored in the memory, and coupled to a host interface (serial port 26) to transmit a computed fault signal (referred to as an “alarm” by King et al.), the fault handling logic including computational logic for logically combining the at least one fault signal received from the optoelectronic transceiver and the at least one flag value received from the memory to generate the computed fault signal (column 14, lines 60-64; column 16, lines 8-38).

Examiner notes that although other claims in the present application recite “flag values” in greater detail (such as claim 1, which specifically recites the flag values are values generated by comparing digital values with limit values, etc), claim 23 and claim 14 on which the claim depends do not recite such further details regarding the at least one flag value. King et al. discloses “flag values” stored in memory such as predetermined thresholds/limits and “end-of-life” criteria; an extraordinary input from the optoelectronic device received by the microcontroller (i.e., a “fault signal”) is compared to these flag values, and an alarm (i.e., a “computed fault signal” is generated (column 14, lines 60-64; column 16, lines 8-38).

Regarding claim 24, King et al. disclose that the plurality of analog signals includes laser bias current and laser output power (Figure 1, for example, shows inputs to the analog-to-digital converter 52 from “average bias monitor” and “power supply monitor”).

Regarding claims 26 and 29, King et al. disclose an optoelectronic device (Figure 1), comprising:

- a laser transmitter 36;

- a controller (various circuit elements shown in Figure 1, including microcontroller 50);

- wherein the controller comprises:

 - memory (the PROM, RAM, and EEPROM elements in microcontroller 50), including one or more memory arrays for storing information related to the optoelectronic device;

 - analog to digital conversion circuitry 52 configured to receive at least one or a plurality of analog signals, the analog signals corresponding to operating conditions of the optoelectronic device, converting at least one of the received analog signals into at least one digital value, and storing the at least one digital value in at least one predefined location within the memory (column 13, lines 49-67; column 14, lines 1-9); and

 - a memory interface 26 for allowing a host device to read from host specified locations within the memory in accordance with commands received from a host device (such as computer 90 in Figure 3; column 10, lines 10-18; column 16, lines 58-63).

.As similarly discussed above with regard to claim 14, although King et al. also disclose a photodiode receiver 40, the receiver 40 receives a signal fed back from the transmitter; they do not specifically disclose a photodiode receiver together with the disclosed laser transmitter in a

“transceiver” context (wherein the receiver would receive signals sent from an opposing communication device).

Regarding claims 27 and 30 (which depend on claims 26 and 29 respectively), King et al. disclose a temperature sensor 56 coupled to the analog to digital conversion circuitry 52, the temperature sensor generating a temperature signal corresponding to a temperature of the transceiver, wherein the analog to digital conversion circuitry is configured to convert the temperature signal into a digital temperature value and to store the digital temperature value in the at least one predefined location within the memory (column 13, lines 14-64).

Regarding claims 28 and 32 (which depend on claims 26 and 29 respectively), King et al. disclose that the analog to digital conversion circuitry is configured to receive a voltage signal from a source external to the controller (such as from “power supply monitor” shown in Figure 1), wherein the analog to digital conversion circuitry is configured to convert the voltage signal into a digital voltage value and to store the digital voltage value in the at least one predefined location within the memory (column 16, lines 16-20).

Regarding claim 31, King et al. disclose control circuitry (modulation current adjust 24 and bias control circuitry 30, for example), responsive to the digital temperature value for controlling operation of the optoelectronic device (column 16, lines 26-31; column 18, lines 4-14).

Regarding claim 33, King et al. disclose control circuitry (modulation current adjust 24 and bias control circuitry 30, for example), responsive to the at least one digital value for controlling operation of the optoelectronic device (column 16, lines 26-31; column 18, lines 4-14).

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. The following rejections in this section of the Office Action are provisional obviousness-type double patenting rejections because the conflicting claims have not in fact been patented. For clarity, Examiner notes that three copending applications in addition to the present application are referred to below: 09/777,917; 10/800,177; and 10/657,554.

9. Claims 1-13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 respectively of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 generally recites the same elements of the apparatus recited in claim 1 of '917, including a transmitter, a receiver, and a controller/controlling circuit including memory, analog to digital conversion circuitry, comparison logic, and an interface for allowing a host to read from locations in memory, wherein flag values are stored in predefined locations in the memory. Claim 1 differs from claim 1 of '917 in that it lacks specific "control circuitry configured to generate control signals to control operation of the laser transmitter in accordance with one or more values stored in memory" and it does not specifically recite that the controller is "a single chip integrated circuit" as recited in claim 1 of '917; claim 1 of the present application is broader than claim 1 of '917.

Claims 2-13 of the present application, which depend on claim 1, recite the same elements and limitations as claims 2-13 of '917, which depend on claim 1 in that application. Therefore, claims 2-13 of the application are also broader than claims 2-13 of '917.

Given the apparatus recited in claims 1-13 of '917, it would have been obvious to a person of ordinary skill in the art to create the apparatus recited in claims 1-13 of the present application by leaving out the control circuitry (in order to use the system to passively monitor the transmitter and receiver, for example). Because these claims in the present application are broader than the claims in '917, claims 1-13 are rejected over claims 1-13 of '917 under obviousness-type double patenting.

10. Claims 14, 17, and 18 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 14 of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 18, which depends on claims 17 and 14, generally recites all the elements of the apparatus recited in claim 14 of '917, including a controller/circuit including memory, analog to digital conversion circuitry, an interface, a power supply voltage sensor, and comparison logic. Claim 18 differs from claim 14 of '917 in that it further specifically recites a transmitter and receiver, but claim 14 of '917 already recites that the circuitry is for monitoring an "optoelectronic device." Laser transmitters and photodiode receivers are well known types of optoelectronic devices. It would have been obvious to a person of ordinary skill in the art to specifically include a transmitter and a receiver as recited in claim 18 of the application to the circuit recited in claim 14 of '917 to specifically use the circuit to control those known optoelectronic devices. Also, given the apparatus recited in claim 14 of '917, it would have been obvious to a person of ordinary skill in the art to create the apparatus recited in claims 14 and 17 of the present application by leaving out the comparison logic later recited in dependent claim 18. Therefore, claims 14, 17, and 18 are rejected over claim 14 of '917 under obvious-type double patenting.

11. Claims 15, 16, 19, 20, 23, and 24 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 15, 16, 19, 20, 23, and 24 respectively of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 15, 16, 19, 20, 23, and 24 of the present application, which depend directly or indirectly on claim 14, recite the same elements and limitations as claims 15, 16, 19, 20, 23, and 24 of '917, which depend on claim 14 in that application.

Therefore, claims 15, 16, 19, 20, 23, and 24 are rejected over claims 15, 16, 19, 20, 23, and 24 of '917 under obvious-type double patenting for the reasons given for the parent claims 14, 17, and 18.

12. Claims 21 and 22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 65 of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 22, which depends on claims 21 and 14, generally recites the same elements of the apparatus recited in claim 65 of '917, including a controller/circuit including memory, analog to digital conversion circuitry, an interface, a temperature sensor, and comparison logic. As similarly discussed above with respect to claims 1 and 18, claim 22 differs from claim 65 of '917 in that it further specifically recites a transmitter and receiver, but claim 65 of '917 already recites that the circuitry is for monitoring an "optoelectronic device." Laser transmitters and photodiode receivers are well known types of optoelectronic devices. It would have been obvious to a person of ordinary skill in the art to specifically include a transmitter and a receiver as recited in claim 22 of the application to the circuit recited in claim 65 of '917 to specifically use the circuit to control those known optoelectronic devices. Also, given the apparatus recited in claim 65 of '917, it would have been obvious to a person of ordinary skill in the art to create the apparatus recited in claim 21 of the present application by leaving out the comparison logic later recited in dependent claim 22. Therefore, claims 21 and 22 are rejected over claim 65 of '917 under obvious-type double patenting.

13. Claim 25 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 25 of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 25 generally recites the same elements of the apparatus recited in claim 25 of '917, including a transmitter, a receiver, and a controller/controlling circuit including analog to digital conversion circuitry, comparison logic, and an interface for allowing a host to read from locations in the circuit, wherein flag values are stored in predefined locations in the circuit. Claim 25 differs from claim 25 of '917 in that it lacks specific "control circuitry configured to generate control signals to control operation of the laser transmitter in accordance with one or more values stored in the integrated circuit" as recited in claim 25 of '917; therefore, claim 25 is broader than claim 25 of '917. Given the apparatus recited in claim 25 of '917, it would have been obvious to a person of ordinary skill in the art to create the apparatus recited in claim 25 of the present application by leaving out the control circuitry. Because this claim in the application is broader than the claim in '917, claim 25 is rejected over claim 25 of '917 under obvious-type double patenting.

14. Claims 26 and 29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 26 and 29 of the present application both generally recite the same

elements of the apparatus recited in claim 1 of '917, including a transmitter and receiver, memory, analog to digital conversion circuitry, and a memory interface.

Claims 26 and 29 differ from claim 1 of '917 in that they lack specific "control circuitry" as recited in claim 1 of '917. Given the apparatus recited in claim 1 of '917, it would have been obvious to a person of ordinary skill in the art to create the apparatus recited in claims 26 and 29 of the instant application by leaving out the control circuitry; therefore, claims 26 and 29 are rejected over claim 1 of '917 under obvious-type double patenting.

15. Claims 27 and 30 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of copending Application No. 09/777,917.

Claims 27 and 30 of the present application, which depend on claims 26 and 29 respectively, each recite the same elements and limitations as claim 8 of '917, which depend on claim 1 in that application. Therefore, claims 27 and 30 are also rejected over claim 8 of '917 under obvious-type double patenting for the reasons given for the parent claims.

16. Claims 31 and 33 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8 and 1 respectively of copending Application No. 09/777,917.

Claims 31 and 33 of the instant application recite control circuitry limitations as already recited in claim 1 of '917. Therefore, claims 31 and 33 are also rejected over claims 8 and 1 of '917 under obvious-type double patenting for the reasons given for their parent claims.

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17. Claims 26 and 29 are also provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 67 of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 26 and 29 of the present application both generally recite the same elements of the apparatus recited in claim 67 of '917, including a controller/circuit including memory, analog to digital conversion circuitry, an interface for allowing a host to read from host-specified locations. Claims 26 and 29 differ from claim 67 of '917 in that they further specifically recite a transmitter and receiver, and lack comparison logic, but claim 67 of '917 already recites that the circuitry is for monitoring an "optoelectronic device." Laser transmitters and photodiode receivers are well known types of optoelectronic devices. It would have been obvious to a person of ordinary skill in the art to specifically include a transmitter and a receiver as recited in claims 26 and 29 of the present application to the circuit recited in claim 67 of '917 to specifically use the circuit to control those known optoelectronic devices. Also, given the apparatus recited in claim 67 of '917, it would have been obvious to a person of ordinary skill in the art to create the apparatus recited in claims 26 and 29 of the instant application by leaving out the comparison logic. Therefore, claims 26 and 29 is rejected over claim 67 of '917 under obvious-type double patenting.

18. Claims 26 and 29 are also provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of copending Application No. 10/800,177.

Claims 17 of 10/800,177 is identical (word for word) to claim 67 of 09/777,917.

Therefore, claims 26 and 29 of the present application are not patentably distinct from claim 17 of 10/800,177 for the same reasons given above with respect to the claim in 09/777,917.

19. Claims 28 and 32 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 73 of copending Application No. 09/777,917.

Claims 28 and 32 of the present application, which depend on claims 26 and 29 respectively, each recite the same elements and limitations as claim 73 of '917, which depends on claim 67 in that application. Therefore, claims 28 and 32 are rejected over claim 73 of '917 under obvious-type double patenting for the reasons given for the parent claims.

20. Claims 28 and 32 are also provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 23 of copending Application No. 10/800,177.

Claim 23 of 10/800,177 is identical (word for word) to claim 73 of 09/777,917.

Therefore, claims 28 and 32 of the present application are not patentably distinct from claim 23 of 10/800,177 for the same reasons given above with respect to the claim in 09/777,917.

21. Claim 34 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 74 of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 34 generally recites the same elements of the apparatus recited in claim 74 of '917, including a controller/circuit including memory, analog to digital conversion

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circuitry, comparison logic, and an interface for allowing a host to read from host-specified memory-mapped locations in the memory, wherein the analog signals include laser bias current, laser output power, and received power.

As similarly discussed above with respect to claim 1, claim 34 differs from claim 74 of '917 in that it further specifically recites a transmitter and receiver, but claim 74 of '917 already recites that the circuitry is for monitoring an "optoelectronic device." Laser transmitters and photodiode receivers are well known types of optoelectronic devices. It would have been obvious to a person of ordinary skill in the art to specifically include a transmitter and a receiver as recited in claim 34 of the present application to the circuit recited in claim 74 of '917 to specifically use the circuit to control those known optoelectronic devices. Therefore, claim 34 is rejected over claim 74 of '917 under obvious-type double patenting for the reasons given for the parent claim.

22. Claim 34 is also provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 24 of copending Application No. 10/800,177.

Claim 24 of 10/800,177 is identical (word for word) to claim 74 of 09/777,917. Therefore, claim 34 of the present application is not patentably distinct from claim 24 of 10/800,177 for the same reasons given above with respect to the claim in 09/777,917.

23. Claims 35-41 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 83-89 respectively of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 35 generally recites the same elements of the apparatus recited in claim 83 of '917, including a controller/circuit including analog to digital conversion circuitry, comparison logic, and an interface for allowing a host to read from host-specified memory-mapped locations in an optoelectronic device wherein flag values are stored in predefined locations in the device. As similarly discussed above with respect to claims 1 and 34, claim 35 differs from claim 83 of '917 in that it further specifically recites a transmitter and receiver, but claim 83 of '917 already recites that the circuitry is for monitoring an "optoelectronic device." Laser transmitters and photodiode receivers are well known types of optoelectronic devices. It would have been obvious to a person of ordinary skill in the art to specifically include a transmitter and a receiver as recited in claim 35 of the present application to the circuit recited in claim 83 of '917 to specifically use the circuit to control those known optoelectronic devices. Therefore, claim 35 is rejected over claim 83 of '917 under obvious-type double patenting.

Claims 36-41 of the present application, which depend on claim 35, recite the same elements and limitations as claims 84-89 of '917, which depend on claim 83 in that application. Therefore, claims 36-41 are also rejected over claims 84-89 of '917 under obvious-type double patenting for the reasons given for the parent claim.

24. Claims 35-41 are also provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 33-39 respectively of copending Application No. 10/800,177.

Claims 33-39 of 10/800,177 are identical (word for word) to claims 83-89 of 09/777,917. Therefore, claims 35-41 of the present application are not patentably distinct from claims 33-39 of 10/800,177 for the same reasons given above with respect to the claims in 09/777,917.

25. Claim 42 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 90 of copending Application No. 09/777,917.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 42 generally recites the same elements of the apparatus recited in claim 90 of '917, including a controller/circuit including analog to digital conversion circuitry, comparison logic, and an interface for allowing a host to read from host-specified memory-mapped locations in an optoelectronic device wherein flag values are stored in predefined locations in the device. As similarly discussed above with respect to claims 1, 34, and 35, claim 42 differs from claim 90 of '917 in that it further specifically recites a transmitter and receiver, but claim 90 of '917 already recites that the circuitry is for monitoring an "optoelectronic device." Laser transmitters and photodiode receivers are well known types of optoelectronic devices. It would have been obvious to a person of ordinary skill in the art to specifically include a transmitter and a receiver as recited in claim 42 of the present application to the circuit recited in claim 90 of '917 to specifically use the circuit to control those known optoelectronic devices. Therefore, claim 42 is rejected over claim 90 of '917 under obvious-type double patenting.

26. Claim 42 is also provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 40 of copending Application No. 10/800,177.

Claim 40 of 10/800,177 is identical (word for word) to claim 90 of 09/777,917.

Therefore, claim 42 of the present application is not patentably distinct from claim 40 of 10/800,177 for the same reasons given above with respect to the claim in 09/777,917.

27. Claims 1 and 14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of copending Application No. 10/800,177.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 14, generally recites all the elements of the apparatus recited in claim 17 of '177, including a controller/circuit including memory, analog to digital conversion circuitry, and an interface configured to enable a host to read from memory. Claim 1 of the present application further recites comparison logic as similarly recited in claim 17 of '177.

Claims 1 and 14 differ from claim 17 of '177 in that they further specifically recite a transmitter and receiver, but claim 17 of '177 already recites that the circuitry is for monitoring an "optoelectronic device." Laser transmitters and photodiode receivers are well known types of optoelectronic devices. It would have been obvious to a person of ordinary skill in the art to specifically include a transmitter and a receiver as recited in claim 1 and 14 of the present application to the circuit recited in claim 17 of '177 to specifically use the circuit to control those known optoelectronic devices. Also, given the apparatus recited in claim 17 of '177, it would have been obvious to a person of ordinary skill in the art to create the apparatus recited in claim 14 of the present application by leaving out the comparison logic. Therefore, claims 1 and 14 are rejected over claim 17 of '177 under obvious-type double patenting.

28. Claims 2-9, 11, 12, 15-22, 27, 30, 31, and 33 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of copending Application No. 10/800,177, in view of King et al.

Claims 2-9, 11, and 12 of the present application depend on claim 1. Claims 15-22 of the present application depend on claim 14. Claim 27 of the present application depends on claim 26. Claims 30, 31, and 33 depend on claim 29. The parent claims are each rejected over claim 17 of '177 under obvious-type double patenting as discussed above.

Examiner notes that King et al. is discussed in further detail above in the rejections under 35 U.S.C. 103.

Claims 2, 3, 15, and 16 further recite a cumulative clock, which claim 17 of '177 lacks. However King et al. teach a cumulative clock in an optoelectronic device controlling system (column 13, lines 64-67; column 14, lines 43-48; column 15, lines 42-50; Figure 12 shows that "hours of operation" is stored in memory). It would have been obvious to a person of ordinary skill in the art to further include a cumulative clock in the system recited by claim 17 of '177 as taught by King et al. in order to store further statistical information about the lifespan of the device since the system already recited by claim 17 of '177 is directed to monitoring the life of the device.

Claim 11 recites control adjustment circuitry and control circuitry, which claim 17 of '177 lacks. However, King et al. teach control adjustment circuitry that adjusts control signals from control circuitry in accordance with values stored in memory (column 16, lines 16-38). It would have been obvious to a person of ordinary skill in the art to include control adjustment

circuitry in the system recited by claim 17 of '177 as taught by King et al. in order to adjust the device in response to monitored changes.

Claims 4 and 17 further recite a power supply voltage sensor, which claim 17 of '177 lacks. However, King et al. teach including a power supply voltage sensor ("power supply monitor" in Figure 1) in a optoelectronic device controller (column 16, lines 16-20). It would have been obvious to a person of ordinary skill in the art to include a power supply voltage sensor in the system recited by claim 17 of '177 as taught by King et al. in order to adjust the device in response to changes in power level and ensure proper operation despite power level fluctuations.

Claims 5, 8, 19, 21, 27, and 30 recite a temperature sensor, which claim 17 of '177 lacks; claims 12, 31, and 33 further recites control circuitry for generating control signals in accordance with a temperature or another digital value, which claim 17 of '177 also lacks. However, King et al. teach including a temperature sensor 56 in a optoelectronic device controller and providing control signals based on digital temperature values (column 7, lines 40-45; column 16, lines 24-38). It would have been obvious to a person of ordinary skill in the art to include a temperature sensor and control circuitry in the system recited by claim 17 of '177 as taught by King et al. in order to adjust the device in response to changes in temperature and ensure proper operation despite temperature fluctuations.

Claims 6, 7, 9, 18, 20, and 22 recite comparison logic specifically for comparing input power levels with power limit values and generating and storing a power level flag and/or comparing input temperature values with temperature limit values and generating and storing a temperature flag. Examiner notes that claim 17 of '177 already recites "comparison logic

configured to compare [some type of] digital values with limit values to generate flag values, wherein the flag values are stored in predefined flag storage locations within the memory during operation of the optoelectronic device” and only lacks specifically reciting that the digital values correspond to power level values or temperature values. However, King et al. teach evaluating power level values and/or temperature values in a optoelectronic device controller (column 16, lines 16-38). It would have been obvious to a person of ordinary skill in the art to include power level values and/or temperature values in the system recited by claim 17 of '177 as taught by King et al. in order to adjust the device in response to changes in power level and temperature and ensure proper operation despite power or temperature fluctuations.

Again, King et al. is relied upon here to provide teaching of a temperature sensor (and corresponding input temperature values and limit temperature values) and a power supply voltage sensor (and corresponding input power level values and limit power level values) and is not relied upon here to provide teaching regarding the comparison logic element already recited in claim 17 of '177.

29. Claims 13 and 24 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 22 of copending Application No. 10/800,177.

Claims 13 and 24 of the present application, which depend on claims 1 and 14 respectively, each recite the same elements and limitations as claim 22 of '177, which depends on claim 17 in that application. Therefore, claims 13 and 24 are rejected over claim 22 of '177 under obvious-type double patenting for the reasons given for the parent claims.

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30. Claims 14, 26, and 29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of copending Application No. 10/657,554.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 14, 26, and 29 of the present application each generally recite the same elements of the apparatus recited in claim 8 of '554, including a transmitter, a receiver, and a controller/circuit including memory, analog to digital conversion circuitry, and an interface for allowing a host to read from host-specified locations in the memory. Claims 14, 26, and 29 differ from claim 8 of '554 in that they lack specific "control circuitry configured to generate control signals to control operation of the laser transmitter in accordance with one or more values stored in memory" and they do not specifically recite that the controller is "a single chip integrated circuit" as recited in claim 8 of '554.

Given the apparatus recited in claim 8 of '554, it would have been obvious to a person of ordinary skill in the art to create the apparatus recited in claims 14, 26, or 29 of the present application by leaving out the control circuitry (in order to use the system to passively monitor the transmitter and receiver, for example). Therefore, claims 14, 26, or 29 are rejected over claim 8 of '554 under obvious-type double patenting.

31. Claims 15-17, 21, 23, 24, 27, 28, 30-33 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of copending Application No. 10/657,554 in view of King et al.

Claims 15-17, 21, 23, and 24 of the present application depend on claim 14. Claims 27 and 28 of the present application depend on claim 26. Claims 30-33 of the present application

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depends on claim 29. The parent claims are each rejected over claim 8 of '554 under obvious-type double patenting as discussed above.

Examiner notes that King et al. is discussed in further detail above in the rejections under 35 U.S.C. 103.

Claims 15 and 16 further recite a cumulative clock, which claim 8 of '554 lacks. However King et al. teach a cumulative clock in an optoelectronic device controlling system (column 13, lines 64-67; column 14, lines 43-48; column 15, lines 42-50; Figure 12 shows that "hours of operation" is stored in memory). It would have been obvious to a person of ordinary skill in the art to further include a cumulative clock in the system recited by claim 8 of '554 as taught by King et al. in order to store further statistical information about the lifespan of the device since the system already recited by claim 8 of '554 is directed to monitoring the life of the device.

Claim 17 further recites a power supply voltage sensor, which claim 8 of '554 lacks. However, King et al. teach including a power supply voltage sensor ("power supply monitor" in Figure 1) in a optoelectronic device controller (column 16, lines 16-20). It would have been obvious to a person of ordinary skill in the art to include a power supply voltage sensor in the system recited by claim 8 of '554 as taught by King et al. in order to adjust the device in response to changes in power level and ensure proper operation despite power level fluctuations.

Claims 21, 27, and 30 recite a temperature sensor, which claim 8 of '554 lacks; claims 31 and 33 further recites control circuitry for generating control signals in accordance with a temperature or another digital value, which claim 8 of '554 also lacks. However, King et al. teach including a temperature sensor 56 in a optoelectronic device controller and providing

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control signals based on digital temperature values (column 7, lines 40-45; column 16, lines 24-38). It would have been obvious to a person of ordinary skill in the art to include a temperature sensor and control circuitry in the system recited by claim 8 of '554 as taught by King et al. in order to adjust the device in response to changes in temperature and ensure proper operation despite temperature fluctuations.

Claim 23 further recites fault handling logic, which claim 8 of '554 lacks. However, King et al. teaches fault handling logic (i.e., the logic circuits in microcontroller 50), coupled to an optoelectronic device for receiving at least one fault signal from the optoelectronic device, coupled to a memory (i.e., the EEPROM) to receive at least one flag value stored in the memory, and coupled to a host interface (serial port 26) to transmit a computed fault signal (referred to as an "alarm" by King et al.), the fault handling logic including computational logic for logically combining the at least one fault signal received from the optoelectronic transceiver and the at least one flag value received from the memory to generate the computed fault signal (column 14, lines 60-64; column 16, lines 8-38).

Given the apparatus recited in claim 8 of '554, it would have been obvious to a person of ordinary skill in the art to provide the system recited in claim 23 of the present application by further including fault handling logic as taught by King et al. in order to raise alarms in the system when extraordinary conditions are observed. Examiner notes that neither claim 8 of '554 nor claim 23 of the present application further specifically recite further details regarding an at least one flag value.

Claim 24 recites that the plurality of analog signals include two analog signals selected from laser bias current, laser output power, and received power, which claim 8 of '554 lacks.

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However, King et al. teach that the plurality of analog signals includes laser bias current and laser output power (Figure 1, for example, shows inputs to the analog-to-digital converter 52 from “average bias monitor” and “power supply monitor”). It would have been obvious to a person of ordinary skill in the art to include laser bias current and laser output power inputs in the system recited by claim 8 of '554 as taught by King et al. in order to adjust the device in response to changes in bias current and output power and ensure proper operation of the device despite fluctuations in these variables.

Claims 28 and 32 recite that the analog to digital circuit is configured to receive a voltage signal from an external source, which claim 8 of '554 lacks. However, King et al. teach that an analog to digital conversion circuitry in an optoelectronic device control system may be configured to receive a voltage signal from a source external to the controller (such as from “power supply monitor” shown in Figure 1), wherein the analog to digital conversion circuitry is configured to convert the voltage signal into a digital voltage value and to store the digital voltage value in the at least one predefined location within the memory (column 16, lines 16-20). It would have been obvious to a person of ordinary skill in the art to include receiving a voltage signal from an external source in the system recited by claim 8 of '554 as taught by King et al. in order to process signals from variable monitors (such as a power supply monitor, or a temperature monitor) and thereby respond to detected changes and ensure proper operation. Claim 8 of '554 is already directed to monitoring an optoelectronic device.

Allowable Subject Matter

32. Claims 1-13, 25, 34-42 contain allowable subject matter (although claims 11, 12, and 25 are also rejected under 35 U.S.C. 112 as discussed above). Claims 18-20 and 22 also contain

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allowable subject matter although they are currently dependent upon a base claim rejected under 35 U.S.C. 103 as discussed above. However, all claims are currently rejected under obvious-type double patenting, and no claims are currently allowed.

33. The following is a statement of reasons for the indication of allowable subject matter:

The prior art, including King et al., does not specifically disclose or fairly teach a system including all the limitations, elements, and/or steps recited in claims 1, 18, 22, 25, 34, 35, and 42 (including the limitations of any parent claims on which they may depend).

King et al. generally disclose a circuit for controlling an optoelectronic device (Figure 1) including memory 50, analog to digital conversion circuitry 52, and control circuitry (such as modulation current adjust element 24), and further disclose monitoring power level values and temperature values by way of making a comparison between inputs and limit values (column 16, lines 24-38). They also generally disclose a host interface (serial port 26). However, they do not specifically further suggest comparison logic for comparing the digital values corresponding to operating conditions of the device with limit values in order to specifically generate flag values, wherein the flag values are specifically stored in predefined locations within the memory during operation of the optoelectronic device and wherein an interface allows a host to directly read from those predefined flag storage locations in memory.

Conclusion

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023.

The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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